

REMARKS

Claims 15-32 are pending in this application. By this Amendment, claims 15, 19, 23, 27, 31 and 32 are amended. No new matter is added. Reconsideration in light of the Amendments and the following remarks is respectfully requested.

In the Office Action, claims 15-18, 23-26 and 31 are rejected under 35 U.S.C. §102(b) over newly cited U.S. Patent No. 5,929,594 to Nonobe et al. ("Nonobe"). Additionally, claims 19-22, 27-30 and 32 are rejected under 35 U.S.C. §103(a) over Nonobe in view of European Patent Publication No. 1,220,413 to Okhubo et al. ("Okhubo"). These rejections are respectfully traversed.

Independent claims 15, 19, 23, 27, 31 and 32 each relate to a hybrid fuel cell system, comprising a fuel cell, an electric power storage device, and a load portion that consumes electric power, in which an amount of electric power consumed by the load portion is controlled based on a difference between a supply electric power set value that needs to be supplied from the electric power storage device, and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device. Additionally, each of these claims recites that an amount of electric power consumed by the load portion is changed so as to reduce the difference and "to remove imbalance between charge and discharge of the electric power storage device in the system." Independent claims 19, 27 and 32 further add a filter that removes a noise component in the difference. Independent claim 23 adds first and second control portions, a difference obtaining portion, and a computer portion. Independent claim 31 similarly adds first and second control means, difference obtaining means, and computing means.

Independent Claims 15, 19, 23

Independent claims 15, 19 and 23 are amended to clarify that the amount of power consumed by the load is controlled to "increase or decrease consumption" to remove the

imbalance. This feature is described, for example, in the problem explained in Applicant's paragraph [0004] and the exemplary solutions explained in Applicant's paragraphs [0009] - [0017]. Nonobe and Ohkubo fails to teach these features.

In making the rejections, the Office Action relies primarily on Figs. 1 and 6 and C10/L61 to C12/L46 of Nonobe. Fig. 1 shows a fuel cell system including fuel cells 20, storage battery 30, sensors 46, 90, control unit 50, multiple load sources including vehicle drive motor 32 and auxiliary machinery 34, inverter 80, and ON/OFF switch 38. Fig. 6 shows a flowchart of operation. The Office Action alleges that control unit 50 controls the amount of electric power consumed by the load based on a difference between an amount of power needed to be supplied and either an amount of power actually supplied or an amount which needs to be consumed (C10/L61 to C11/L8 and C12/L23-46). It is also alleged that the control portion changes the amount consumed by the load 32, 34 to remove imbalance between charge and discharge (C11/L56 to C12/L7 and Fig. 6). Applicant respectfully disagrees.

In Nonobe's step S120 in Fig. 6, "restricting" of consumption of power by main drive motor 32 is shown using inverter 80 when charge is below a set value and canceling the restriction when it rises above a certain value in step S170.

Thus, the control in Nonobe only "restricts" power consumption of the load to address an undercharge condition. Nonobe does not "increase" consumption, if needed, and therefore fails to address a possible overcharge condition through such control of load. That is, the relied-upon passage on C11/L56 to C12/L7 fails to discuss any possibility of "increase" and does not address or resolve an imbalance due to an error resulting in an overcharge condition.

Ohkubo fails to overcome deficiencies of Nonobe with respect to independent claims 15, 19 and 23. The Office Action relies on Ohkubo only for an alleged teaching of an integrating means that functions as a low-pass filter.

Accordingly, independent claims 15, 19 and 23, and claims dependent therefrom, distinguish over Nonobe, alone or in view of Ohkubo.

Independent Claims 27, 31 and 32

Independent claims 27, 31 and 32 are amended to clarify that the load portion includes "a system accessory device other than a main drive motor" and changing of the amount of electric power consumed by the "system accessory device of the load portion to remove imbalance." This is supported, for example, by Applicant's paragraphs [0009] - [0017]. Nonobe alone or in view of Ohkubo fails to teach these features.

In Applicants' specification (paragraphs [0009] to [0017]), it is stated that the load being controlled to remove imbalance can be an auxiliary device, separate from a main drive motor. Thus, the imbalance can be corrected without necessarily altering the power consumption of the main drive motor of the vehicle.

Although the cited passage on C11/L56 to C12/L7 indicates that the power consumed (load) includes both that from drive motor 32 and auxiliary machinery 34, this passage clearly states that only the main drive load is controlled to be restricted. Thus, although a system accessory may draw power from the battery in Nonobe, its consumption is not controlled to remove imbalance. In fact, col. 12 of Nonobe teaches away from such a possibility by stating that because the power consumed by auxiliary machinery 34 is used to maintain the fuel-cell system 10 in an operating state, target power to be restricted is only that consumed by motor 32. Therefore, the subject matter of independent claims 27, 31 and 32 is not taught by, or obvious from, Nonobe. Ohkubo fails to overcome the deficiencies of Nonobe with respect to these claims.

Accordingly, independent claims 27, 31 and 32, and claims dependent therefrom, distinguish over the applied references.

For the foregoing reasons, withdrawal of the rejections is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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